ABSTRACT

SIMULTANEOUS DETERMINATION OF EGCG AND CAFFEINE IN SENCHA AND GYOKURO GREENTEA PRODUCT FROM JAPAN USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY METHOD

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Green tea is a popular drink that is consumed daily by millions of people around the world. Green tea contains EGGC and kafein. EGCG is the most abundant, potent polyphenol in tea. It has various medicinal potentialities as antioxidant, antimicrobal, anti-cardiovascular and anti-hypertensive activity. The content of caffeine in tea can stimulate the central nervous system to reduce drowsiness, smooth muscle relaxation and heart muscle stimulation. In this conducted research, two types of Japanese green tea which are Gyokuro and Sencha were selected. Gyokuro and Sencha have differences in cultivation process. This research aim to simultaneously determine the level of EGCG and caffeine in Sencha and Gyokuro green tea product using HPLC method. The optimized method consists of the use of a C18 reversed-phase column, an isocratic elution system (0.5 ml/min) of water:metanol:acetate acid 2% (60:36:5 v/v/v) and the detection wavelength of 273 nm. EGCG and caffeine in sample tea were well separated on the chromatogram within 15 min. The method was validated for selectivity, accuracy, linearity, precision, LOD and LOQ. The concentration of EGCG and kafein in Gyokuro green tea were 0.64% and 1.68%, resepectively. The concentration of EGCG and kafein in Sencha green tea were 0.66% and 1.13%, respectively.

Keywords : Green tea, EGCG, caffeine, simultaneous, HPLC